WATERSHED WRAP

Quarterly Newsletter from the Coeur d'Alene Tribe's Fish & Wildlife Program describing watershed Management efforts. Offering readers food for conversation and paper for wrapping!

Fall Equinox 2004 (Vol. 8 No. 3)

The Coeur d'Alene Tribe's Fish, and Wildlife Programs work in a variety of cooperative, governmental and educational arenas in efforts to protect, enhance and restore our fish, and wildlife resources. This publication is intended to provide all people interested in fish, water and wildlife of the Coeur d'Alene Reservation information about our program, and to solicit your support as well as constructive criticism. Thank you for your interest.

Respectfully,

Mark H. Stanger, Fish, Water and Wildlife Outreach & Education Specialist

Garbage and Recycling Survey Coming soon

By Environmental Programs of Natural Resources Department

You could win a Pendleton Blanket or $50 Cash by returning a completed survey!

The Coeur d'Alene Tribe, through the Natural Resource Department, received a grant to analyze the way garbage is handled on the Coeur d'Alene Reservation, and to search for ways to improve handling methods and opportunities. To further that study, the Environmental Programs is sending out a survey to all households on the reservation. You should be receiving this survey during the last week of September. Answering all of the questions on the survey and returning it by the deadline will **enter you entered to win a Pendleton blanket or $50 cash**. Watch your mailbox for the arrival of the survey and respond quickly. This is an excellent opportunity to participate in the beginning stages of solid waste planning for our region. If you have any questions, please contact the Environmental Programs at 686-1800, either Tiffany Allgood ext. 8802, or Bill Denton ext. 6412 (Blanket is only an example not necessarily the prize design)

Summer Interns Learning at Work & at Camps

By Mark H. Stanger Outreach & Education Specialist

This summer Fisheries Program hired three Interns (Bazil Peone, Mathew Peone, and Andrew Fanning.) They were very eager to learn what types of jobs we had to offer through our Natural Resource programs. A sample of what types of jobs they did over the summer were: Fish shocking, wildlife monitoring, water quality monitoring, work on Rails to Trails, and Lake Management projects. The Interns worked for all these different departments. They all enjoyed their working and learning experience with all these departments. They attended two educational camps this summer. June 14th to 20th they attended a Natural Resource camp at North Fork Ranger Dist, Canyon Work Center down by Pierce, Idaho. At this camp the interns worked with the local Forest Service (Clearwater, Panhandle, Colville, Nez Perce Forest) programs. The interns learned how to prune trees & cut brush along trails, how to use forestry equipment and miscellaneous other jobs. The second camp was also a learning & training camp put on by the Native American Fish & Wildlife Society of the Pacific Region. The camp was at Twin Lakes on the Colville Reservation hosted by the Colville Tribe. At this camp they learned a little about how the tribes go out and shock fish in the lakes and streams. There were a lot of speakers that came to camp and teach the students what their different natural resource programs had to offer them. The youth had a very good time learning and having fun at these camps and meeting new people from other reservations. All the interns are looking forward to coming back next year!

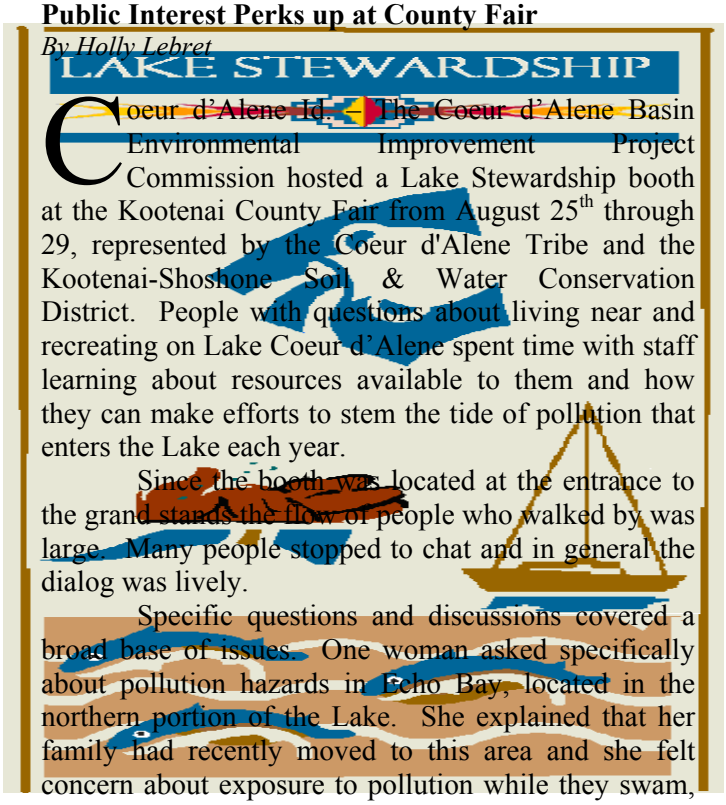
Our program would like to thank the youth that had participated in our intern program this summer and hope you have a successful school year!

Steve, Cassie, Mathew, Andrew, Uncle Pat at camp!

Introduction of New Staff
By Stephanie Hallock, Fisheries Biologist

Hello, my name is Stephanie Hallock. I was recently hired as the new Fisheries Habitat Restoration Biologist for the Coeur d'Alene Tribe's Fisheries Department. I am originally from Boise but now call Coeur d'Alene my home. I have a B.S. in Biological Systems Engineering from the University of Idaho and a M.S. in Civil Engineering with a focus on water resources from Montana State University. I have a broad background in watershed science, fisheries, and engineering which I hope will make me an asset to the Tribe. I look forward to working here.

Public Interest Perks up at County Fair
By Holly Lebret



Coeur d'Alene Id. – The Coeur d'Alene Basin Environmental Improvement Project Commission hosted a Lake Stewardship booth at the Kootenai County Fair from August 25th through 29, represented by the Coeur d'Alene Tribe and the Kootenai-Shoshone Soil & Water Conservation District. People with questions about living near and recreating on Lake Coeur d'Alene spent time with staff learning about resources available to them and how they can make efforts to stem the tide of pollution that enters the Lake each year.

Since the booth was located at the entrance to the grand stands the flow of people who walked by was large. Many people stopped to chat and in general the dialog was lively.

Specific questions and discussions covered a broad base of issues. One woman asked specifically about pollution hazards in Echo Bay, located in the northern portion of the Lake. She explained that her family had recently moved to this area and she felt concern about exposure to pollution while they swam, fished and recreated at their new home.

Other questions asked included: whether Kootenai County planned to develop a recycling program; if milfoil (noxious water weed) was found in Lake Coeur d'Alene; what type of action could be taken against the City of Coeur d'Alene for the recent accidental release of sewage into the Spokane River; and several questions were asked about how to obtain copies of the maps we had posted (produced by the Tribal GIS Dept.). Others commented that they were pleased with the Tribe's approach to Lake protection, that they viewed our involvement as critical and "the last hope for the Lake."

Project Manager, Phillip Cernera summed it up: "It's great to get out in the community and represent the Tribe concerning Lake Management. If we provide information, which helps even one user better, protect our Lake, then our efforts were worthwhile. I think we accomplished our mission and we look forward to the fair next year."

Public Announcement

The Coeur d'Alene Tribe's Fish & Wildlife Programs

Invite all those interested to participate in gathering historical information about the conditions in Hangman Creek and it's tributaries.
The Tribe is currently in Phase I of the Hangman Creek Restoration Project in which we are assessing the fish habitat and compiling historical conditions. Phase II is scheduled to begin next year and will involve the actual restoration of key areas.
Due to the lack of historical data in the Hangman Creek watershed we need information from longtime residents about several key questions:
Where were trout found 20 – 50 years ago?
Have there been any changes in the amounts of water flowing during the summer?
What changes in water clarity do you see?
What changes do you see in the riparian zone, (i.e. presence of cottonwoods, alders, aspen, dogwoods)?
We are seeking information regarding the following streams:
Hangman Creek, NF Rock Creek
Mission Creek, Sheep Creek, Indian Creek, Little Hangman, Martin Creek, Conrad Creek
Mineral Creek, Smith Creek
Moctilemne Creek, S. Fork Hangman Nehchen Creek (formerly Squaw)
Hill Creek, Bunnel Creek, Any unnamed streams in the area. Interviews can be done at the Fish & Wildlife office. Contact Bruce Kinkead, Fisheries Biologist.
401 Annie Antelope Dr, Plummer, ID 83851
Ph:(208) 686-6071 Fax (208) 686-3021
E-mail: bkinkead@cdatribe-nsn.gov

THE 'EL̵TU̲MISH PROJECT: Slowly Changing the Look of the Benewah Valley

By Angelo Vitale, Fisheries Biologist

An article in the Fall 2003 edition of Watershed Wrap (Vol. 7 No. 3) discussed the results of a recent stream channel assessment and the initial management objectives for the old Johnson homestead, a 411 acre parcel in the Benewah Valley which was purchased by the Tribe in 2001 with conservation purposes in mind. The collective efforts to restore the historic conditions of this property have been christened THE 'EL̵TU̲MISH PROJECT, after the Coeur d'Alene language word for the native westslope cutthroat trout. At the heart of this project is the desire of Tribal Elders and Fish and Wildlife managers to see fish and wildlife populations reach their potential by making improvements in stream channel and wetland function on the property that will help propagate benefits to the rest of the watershed.

It is difficult to write about this property or The 'El̵tu̲mish Project for that matter without acknowledging the important history associated with the area. The property was an important travel route for the Schitsu'umsh (Coeur d'Alene People) between Sbiinwahu'lumkhw, the area around Benewah Lake, and L'lkhwi'lus (DeSmet) and Chetche̲'mch'm (Emida). According to Tribal Elder Felix Aripa, many Coeur d'Alene families camped, hunted, fished and gathered plants in the area. More recently, in 1915 and 1916 the Herrick Company built a mill and flume on the property, which was later acquired by Reuben Marquardt in 1926 and subsequently by Billie Louise Johnson.

The property is located in a portion of the watershed that historically provided abundant summer and winter rearing habitats for westslope cutthroat trout. The existing conditions, however, support only low densities of cutthroat (<2 fish/100 square meters) and a lack of habitat diversity, reduced exchange of ground water between the stream channel and adjacent wetlands, and elevated water temperatures are all factors that limit the productivity of the fishery.

The Fisheries Program are now nearing completion on the first two seasons of project implementation. These initial projects have included valley bottom tree planting, backwater wetland development, addition of large wood to the floodplain, and replacement of the Windfall Creek culvert. The Fisheries Program views these projects as important first steps in setting the stage for substantially improving habitat conditions.

The current management plan calls for reforesting approximately 80 acres of the property, mainly along the stream channel, to improve long-term stream channel stability and provide shade and a steady supply of wood material to the channel. About 40 acres have been planted so far. This effort received a helpful boost from a group of about 26 residents of the valley who gathered in April to tour the property and help plant trees. The Fisheries Program owes a lot of our initial management successes to contributions from individuals like these.

An unfortunate consequence resulting from the processes of channel entrenchment that have shaped the stream during the last 60-80 years is that the groundwater table has lowered along with the streambed, and many of the remaining wetland areas in the valley are only marginal in size. To enhance wetlands and fish habitat, approximately 6 acres of the valley bottom have been excavated since fall 2003 to emulate abandoned stream meanders and flood channels. These areas have been designed to be free draining and should function as feeding and rearing areas for fish during high water and provide wetland habitats for waterfowl and ungulates the rest of the year. Other researchers have shown these relatively low-velocity areas provide important habitat capacity for salmon and trout during migratory periods and I observed many young-of-the-year fish using these areas this spring while the water was still high enough to create a backwater effect in the channels. Some additional work will be completed this fall and next spring to finish planting these areas with a mix of trees, shrubs and grasses.

Daizy Fletcher plants a cedar tree at the old Marquardt millpond as Bill Fletcher and Angelo Vitale look on.

Tribal Fisheries technician, Brian Harper, plants grass plugs in the wetlands created by the 'Ełtumish Project.

One of the more obvious features of the project is the large wood that we have placed at select locations in the valley bottom. We are using wood in this way to increase the resistance to erosion near and within several existing flood channels. To some this may seem like a "waste" of good wood, but most of the logs we have used are dead or diseased trees that lost most of their market value before harvest. Fisheries Program understands that standing dead and/or fallen trees in riparian areas play a critical role in maintaining channel stability and good trout habitat and are trying to mimic these processes. The woody debris will help dissipate the energy of floodwaters and reduce local scour, reducing the overall loss of valuable floodplain soils. We placed approximately 50,000 BF of large wood by September 2003 and an additional 8,000-12,000 BF will be placed on Potlatch land later this fall thanks to their willingness to engage in this cooperative effort with the Tribe. Neil Smith, the Potlatch Unit Manager in St. Maries, was instrumental in allowing this work to continue on their property adjacent to the Tribe's ownership.

Finally, The Fisheries Program has also been busy implementing our design to replace the culvert at the confluence of Windfall Creek and Benewah Creek. As the base level of Benewah Creek has lowered over the years, this culvert has increasingly become a barrier to larger fish for longer periods of time. In the spring, it is common to see large cutthroat trout that have moved upstream from the lake to spawn that are unable to navigate this culvert. We are working to replace the existing 48" culvert with a 87" x 63" pipe arch to both increase the capacity and reduce water velocities through the pipe. Secondly, we are nearing completion of a series of rock riffles extending 600' downstream from the outlet of the culvert that will raise the streambed to the level of the culvert, thereby eliminating the need for fish to "jump" into Windfall Creek. We are proceeding with this work at the time of this writing and should be completed by this fall.

Engineered woody debris jam completed on the Johnson property (9/30/03).

The Fisheries Program greatly appreciates the interest and support of everyone in helping us realize our objectives for this project! Special thanks go to Felix Aripa, the Coeur d'Alene Tribal Council and Natural Resource Committee, Potlatch Corp., Neil Smith, Dave Johnson, the Benewah Valley Association, and those neighboring the property. We will do our best to keep you informed of our plans and progress for The 'Ełtumish Project through this newsletter and other forums. And please don't hesitate to call the Fisheries Program office (686-5302 or 686-6903) with any questions.

Hangman Creek Restoration Project Update: Genetics and Macro-invertebrate sampling complete; Call for volunteers for restoration work in 2005

By Bruce Kinkead, Fisheries Biologist

The third year of assessments is well under way with some major tasks already completed for this field season. The fieldwork for fish and genetics sampling is completed. Fish were sampled at 73 locations in the watershed using blocknets and backpack elecroshockers. Fish were measured for length, weight, and fin clips preserved for genetic analysis, which will be done by Washington's Genetics Lab in Olympia. This analysis will determine if the

trout in Hangman are native Redband trout and how much hybridization has occurred from introductions of cutthroat trout and non-native hatchery rainbows, which are derived from coastal stocks. Results from the genetics analysis will be done by spring 2005.

At these same sites, macroinvertebrates were sampled and the spawning substrate was quantified. Macroinvertebrates will be identified to species and analysis will include a set of metrics to describe the habitat. Macroinvertebrates show various abilities to survive in stressed environments. Many sensitive organisms require cold, fast, well-oxygenated water with large pore spaces in the gravel to avoid predation. Examples would include many of the insects that fly-fisherman imitate such as the stonefly and mayfly. There are statistical indexes or "metrics" that describe whether the stream is cold or how much fine sediments have impacted the biota. Often, the presence of certain indicator species says a lot whether a stream habitat is capable of supporting trout. This is often very helpful for fisheries biologist because the absence of trout from a site may be due to other factors, such migration barriers, competition from non-native fish, or pressure recreational fishing. Complete analysis will also be done by spring of 2005.

As we begin to look forward to actual restoration work to begin in 2005, we realize that we cannot do this alone. Residents will need to become involved if they want favorable conditions in the watershed such as, reduction of erosion, more fishing opportunities, healthier wildlife populations, less noxious weeds, better grazing for livestock, and streams that run throughout the summer without the winter and spring flooding that we so often see. Involvement can come in a variety of forms. It may be as large as signing an agreement to realign the stream channel to historic conditions on their property or to put land into the CRP program, or what may seem to be minor as coming out for a day of willow clipping. Small contributions by many can add up to great results. Many areas in Hangman Creek are so dominated by noxious weeds that provide no shade for streams or wildlife support that the opportunities for volunteers are endless. We also call upon teachers and public outreach specialist who may support the project by organizing class projects and field trips on Arbor Day and Earth Day to plant trees and shrubs. Are you good with power tools? Perhaps you can help us installing instream structures that create habitat diversity and increase pool size and frequency. Help in any way, shape or form will be a welcome sight. We are putting together a list of people interested and will plan projects to allow everyone interested to contribute. Contact Bruce Kinkead for additional information.

E-mail: bkinkead@cdatribe-nsn.gov
(208) 686-6071

THE BROOK TROUT REMOVAL PROJECT: Reducing competition Between Non-Native Brook Trout and Westslope Cutthroat Trout in Benewah Creek

By Dale W. Chess, Fisheries Biologist

In the previous article of this issue (THE 'EL-TUMISH PROJECT) Angelo Vitale described habitat restoration projects implemented to improve the Benewah Creek ecosystem for westslope cutthroat trout and other native species. This article describes the brook trout removal project in Benewah Creek, another Fisheries Program strategy to help restore harvestable populations of native adfluvial westslope cutthroat trout in Benewah Creek. The brook trout removal project was developed in late 2003, approved by the Tribal Natural Resource Committee and authorized by the Tribal Council resolution #90 on January 22, 2004.

Background: Brook trout negatively impact westslope cutthroat trout by competing for habitat, food, and by preying on young cutthroat trout. The brook trout life history and behavior allow them to rapidly populate streams they have been introduced to or invaded. When brook trout invade a stream system, they initially migrate into the upper tributaries where they spawn. After several generations, as they populate the system, they move downstream. After many generations the outcome is a large population of small brook trout distributed throughout a stream. Brook trout can rapidly populate a stream and compete with westslope cutthroat trout because they reproduce at an early age. Brook trout reproduce for the first time at age 2 or 3, compared to first reproduction at 5 or 6 years for adfluvial westslope cutthroat trout. In addition to early reproduction, brook trout spawn in the fall compared to spring-spawning cutthroat trout. This provides the young brook trout with a competitive advantage because they hatch earlier and are already

feeding and are larger than the cutthroat trout in the spring and summer of their first year. Competition during these early life stages likely has the greatest effect on westslope cutthroat trout production.

Project: The Fisheries Program has monitored the population of westslope cutthroat and brook trout in Benewah and Alder Creeks for the past nine years. Alder Creek provides an example of a stream with a cutthroat trout population that has been dramatically affected by the invasion of non-native brook trout. The brook trout population in Alder Creek is approximately 8 times larger than the cutthroat trout population (see Figure 1 and 2). There is very little spatial overlap between brook tout and cutthroat trout in the upper reaches and the North Fork Alder Creek. Brook trout have essentially "squeezed" the cutthroat trout from Alder Creek. This suggests that brook trout invaded Alder Creek many years ago and established a resilient population in that system. In contrast, the brook trout population in Benewah Creek is much lower (see Figure 1) and the cutthroat trout population is approximately 7 times larger than the brook trout population. In addition, our data shows the two species overlap in many of the population sampling sites in Benewah Creek, suggesting brook trout have not become dominant.

Brook trout do not offer the same harvest potential as adfluvial westslope cutthroat trout. Brook trout are much smaller than adfluvial westslope cutthroat trout. The brook trout population in Alder Creek is typical of a stunted population with only 3% of the brook trout being >8 inches in length compared to 12% being >8 inches in Benewah Creek. In either system brook trout do not provide nearly as much harvest potential as the larger migratory cutthroat trout, who are typically >14 inches in length.

Given all of the information above, the reader might ask, why Fisheries Managers are only removing brook trout from Benewah and not also from Alder Creek? The reason we are not removing brook trout from Alder Creek is because research from other brook trout invasions similar to Alder Creek suggest that the brook trout population in Alder Creek is established and effective removal and control will require much more effort. In contrast, the population in Benewah Creek is still invading, has not become established and will be easier to control. The intention is to apply what is learned from Benewah Creek to the Alder Creek brook trout population in the future. Alder Creek also serves as a control to aid in the evaluation of the removal in Benewah Creek.

The Fisheries Program started removing brook trout from the West Fork and South Fork of Benewah Creek in mid-August of this year using a backpack electroshocker. The fisheries field crew comprised of Jeff Jordan, Dan Jolibois, John LaSarte, Phillip Fulton and Bryan Harper shocked entire 1-2 mile segments up the West Fork and South Fork Benewah Creek. The brook trout removal process was difficult and the crew had to work in thick alder in hot weather. The choice to start in August the removal was because at that time of the summer brook trout are more concentrated in the cooler upper tributaries, escaping the warmer mainstem, and have not spawned yet.

Results: A total of 671 brook trout were removed from Benewah Creek. A sample of 141 fish was dissected for gender determination, maturation, egg production and length and weight measurements. This data will be used to estimate the amount of potential brook trout production removed from the system. The remaining 526 brook trout were transported to Worley Pond providing fishing opportunities to Tribal members and valid Tribal License holder. A couple of important points learned were this summer from the brook trout removal project. First, it is feasible to remove a large number of brook trout by electroshocking. Second, although the brook trout density is high in the lower reaches of the tributaries, cutthroat trout dominate the upper reaches of the tributaries. These are good results, because they show that brook trout have not become well established, like in Alder Creek, and they may be able to be controlled by removal. The Fisheries Program will evaluate the effectiveness of the project by using annual population estimates from the historical shocking sites. We are optimistic the combination of habitat restoration and brook trout removal will boost westslope cutthroat trout production. **See Graphs on the next page!**

Source Water Protection Grant

By Bill Denton, Environmental Health Specialist

Work is underway on a $56,600 EPA Source Water Protection Grant that was awarded to the Environmental Programs Office/Environmental Health. Ridolfi Inc. is providing consultant services for the grant. Ridolfi started work on the project in May and will finish by the end of September 2004.

This study represents "first steps" towards development of a Source Water Protection Plan for the Coeur d'Alene Tribe's public drinking water supplies. Because drinking water supplies (surface or groundwater) are limited and are subject to contamination from a variety of sources, protecting these supplies is of utmost importance.

During this phase of the project, Ridolfi will first use public records to locate all public and private water wells within the boundaries of the Coeur d'Alene Reservation. Whenever possible, GPS coordinates will

be provided for the water supplies so that they can be added as a layer to the Tribe's GIS database. While a source water protection plan is primarily for public water supplies, many of the principles can be used to protect private water wells, if the well owners desire.

The second goal of the study will be to determine the criteria to be used for selecting source water protection areas for all Tribal public supplies. With Tribal input, Ridolfi will recommend criteria based upon the types of land use activities, natural background elements that may affect water quality, and existing jurisdictions and policies. Part of this phase of the study will be to inventory all potential contamination sources surrounding the public water supplies.

Based upon the source water protection criteria, existing hydrogeology information, and the contaminant inventory, the final phase of the project will be to recommend source water protection boundaries for each public supply.

As mentioned above, this grant funds only the initial work necessary for development of a Source Water Protection Plan. Additional monies and study will be required before the actual plan is written and presented to the Tribal Council for consideration.

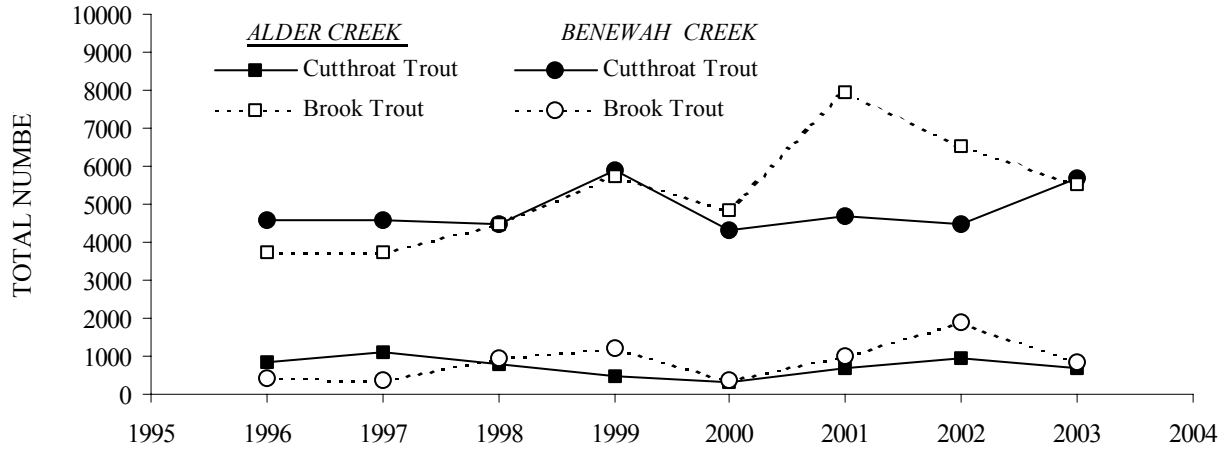


Figure 1. Estimated population of brook trout and cutthroat trout in Benewah and Alder Creeks.

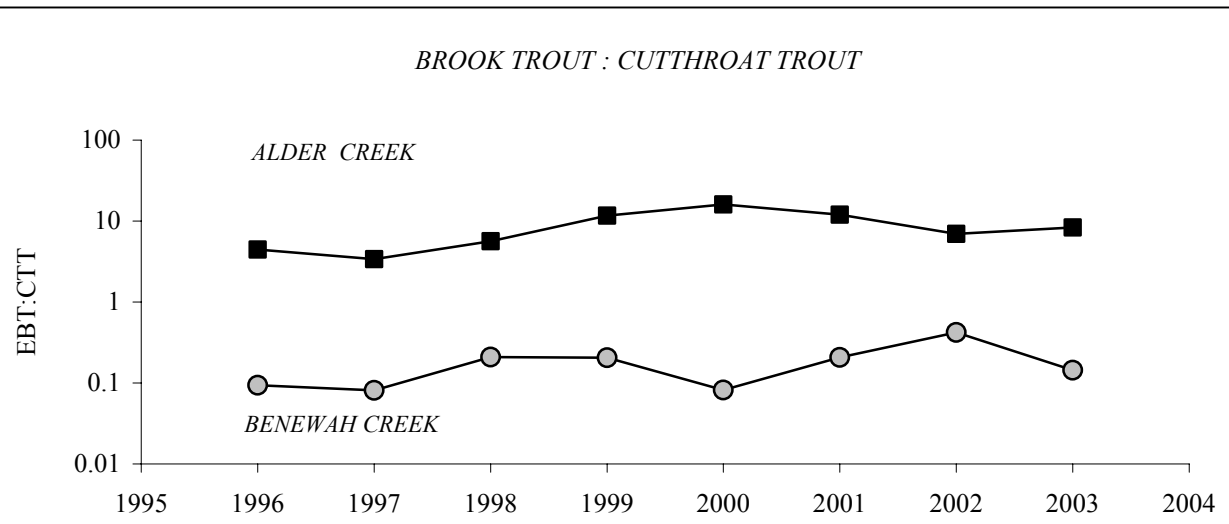


Figure 2. The ratio of brook trout to cutthroat trout in Benewah and Alder Creeks.